Abstract ID : 774

Title : CIRCADIAN RHYTHMICITY IN INTRASPECIFIC AGGRESSION IN CAPTIVE KILLER WHALES

Category : Behavior

Student : Not Applicable

Preferred Format : Either Oral or Poster Presentation

Abstract : A more complete understanding of intraspecific aggression in killer whales would improve both our understanding of the social dynamics in that species and our ability to effectively manage them when they are held in captivity. As part of an effort to explore this topic, we recorded the time of occurrence of each of 31 distinguishable vocal "syllables" produced by five killer whales (Orcinus orca, of Icelandic stock) at Marineland of Canada over 42 separate 24 hour periods spaced out evenly over a one year period. Four of these distinct "syllables" were so strongly associated with bouts of aggression observable during daylight hours (r's=0.3-0.8, $p < .001$), they constituted an unambiguous acoustic signature of agonistic interactions among our subjects. When analyzed by time of day, the clustering of these four sounds showed a clear circadian pattern in which a peak of production occurred between 3 and 4 am. Overall, the rate of occurrence of the agonistic acoustic signature was six times greater at nighttime (when darkness prevented the visual confirmation of aggression) than during the day ($ChiSq(1)=23.4$, $p < .001$). The question now arises whether the circadian pattern shown by our subjects reflects a natural tendency in this species, or if it is secondary to the circumstances of captivity.